

**California State Lands Commission Marine Invasive Species Program
Vessel Fouling Technical Advisory Group Meeting Notes
February 14, 2011 - Sacramento, CA**

Attendees

Steve Morin – Chevron Shipping
Maurya Falkner - California State Lands Commission
Harry Coulombe - Farwest Corrosion Control Company
Chris Scianni - California State Lands Commission
Nicole Dobroski - California State Lands Commission
Lynn Takata - California State Lands Commission
Sharon Shiba – California Department of Fish and Game
Dominic Gregorio – California State Water Resources Control Board
Renan Jauregui – California State Water Resources Control Board

Teleconference

Jackie Mackay – California State Lands Commission
Tom Burke – California State Lands Commission
Karen McDowell – San Francisco Estuary Partnership
Megan McCann – Seaspan Ship Management
Jeremy McConnell – Maersk Line
Rian Hooff – Oregon Department of Environmental Quality
Mike Paul – Oregon Department of Environmental Quality
Ashley Coutts – Biofouling Solutions
Ian Davidson – Portland State University/Aquatic Bioinvasions Research and Policy Institute (ABRPI)
Greg Ruiz - Smithsonian Environmental Research Center/ABRPI
Lauren Silva – Maersk Line
John Millett – International Paint
John Berge – Pacific Merchant Shipping Association
Sande George – Stefan George Associates
Sarah Gowland – Australian Department of Agriculture, Fisheries and Forestry
Sonia Gorgula – Australian Department of Agriculture, Fisheries and Forestry

News

The International Maritime Organization (IMO) Draft Biofouling Guidelines have been finalized at last weeks' meeting of the Bulk Liquids and Gases subcommittee and are going to the MEPC meeting for final approval in July.

Introduction/Review of TAG Purpose and Goals (power point)

The legislative mandate addressed by this technical advisory group (from Assembly Bill 740 of 2007):
"On or before January 1, 2012, the commission... shall develop and adopt regulations governing the management of hull fouling on vessels arriving at a California port or place"

- In order to meet this 2010 deadline, our original intention was for the proposed regulations to go to the Office of Administrative Law (OAL) this month (February). However, submission to OAL probably won't happen until after at least one more meeting. Given that our original plan was on the conservative side, we are still hoping to meet our January 2012 deadline by submitting to OAL in next couple of months (though the timing may be tight).

- Regulations that will be developed through this process are part of the overall legislative mandate for our program, to move California forward to the stated goal of the Marine Invasive Species Act (MISA 2003): "...move the state expeditiously toward elimination of the discharge of nonindigenous species into the waters of the state or into waters that may impact the waters of the state..."

Recap of Previous TAG Meetings

Meeting 1: August 2010 in Sacramento

- Goal: Set foundation for future meetings and discussions
- (Re)Introduction to the Marine Invasive Species Program (MISP), and introduction to the mandate of AB 740. Prior to this meeting, the last biofouling TAG meeting was in December of 2007.
- Presentation: Analysis of the Hull Husbandry Reporting Form (HHRF) data collected since 2008 showing hull husbandry patterns and voyage characteristics of the entire CA fleet.
- Presentation: Results from MISP-funded biofouling research conducted by Ian Davidson and colleagues at the Aquatic Bioinvasions Research and Policy Institute.

Meeting 2: Long Beach, October 2010

- Review of current CSLC biofouling management requirements
- Review of activities/developments at the IMO (guidelines, management plans, record books)
- Presentation: Biological research results that highlighted the importance of niche areas and high risk vessels (Davidson)
- Discussions focused on niche areas, high risk vessels, IMO considerations for management options, management plans, record books, and the need to be as consistent as possible with IMO.

Today's Meeting

- Discuss draft regulations that were developed, based on discussions at our previous two TAG meetings, the biological data, and HHRF data. Draft regulations were distributed to TAG members prior to the meeting.
- Main intent of the draft regulations were:
 - Maintain consistency with IMO, where possible
 - Address high risk vessels and niche areas
 - Utilize biofouling cleanliness standards for ships
 - Incorporate management plans and record books similar to IMO as well as the existing CSLC ballast water management plans and logs.

Review of Draft Regulations and Rationale

Section 1- Purpose, Applicability and Date of Implementation

- Purpose extracted directly from the Marine Invasive Species Act (MISA)

- Applicability – limits the program’s jurisdiction to vessels over 300 GRT, with the ability to carry ballast water. The capability to carry ballast water doesn’t necessarily relate to fouling, but we are limited by statute – this jurisdictional limit is directly stated in MISA. Changing this would require legislative changes to statute.

Section 2 - Definitions

- Most are directly extracted from the MISA or IMO guidelines, or slightly modified from definitions in these documents. Given that the final IMO biofouling guidelines are complete, we will review and modify those terms to align with IMO.

Section 3 – Performance Standards for Biofouling Management

- Goal: Provide a level of cleanliness to maintain (or clean to), while giving niche areas extra attention given their high risk nature, and while recognizing that mandating total cleanliness may not be possible.
- The Level of Fouling (LOF) scale we are proposing to use is a modified version of a well-known, well-vetted, peer-reviewed ranking scale that has been used on a variety of vessel types. It would be legally defensible, it’s easy to teach, and it limits subjectivity. This scale was first introduced in:

Floerl, O., G.J. Inglis, and B.J. Hayden. 2005. A Risk-Based Predictive Tool to Prevent Accidental Introductions of Nonindigenous Marine Species. *Environmental Management* 35(6): 765-778.

Section 4 & 5 - Biofouling Management Plan & Biofouling Record Book

- Goal: Maintain consistency with IMO guidelines, but include some mandatory requirements. Also provide a central place where information is maintained to facilitate inspection process, and facilitate crew completion of paperwork to be submitted.

Section 6 –Requirements for Vessels With Extended Residency Periods (90 days or longer)

- Goal: Target highest risk vessels discussed at meeting #2: laid up vessels, stochastic vessels, work vessels, etc...though all vessels would still have to meet standards. Only vessels covered by this section would have to prove that they do so upon arrival.
- Necessary documentation would include: Inspection report, in-water cleaning report, or dry dock report showing cleanliness meeting CA standards.
- Rest of the fleet would be subject to potential boarding/inspection based on risk assessment (BF Reporting Form). Paperwork review, reporting form answers, examination of waterline would be taken into account to determine if further inspection would be necessary.
- 90 day criterion was intended to capture highest risk vessels, without placing a large documentation submission burden on the majority of the fleet.
 - Based on HHRF data, 90 days would affect 1.7% of the fleet (29 ships). 60 days would affect 3.3% of fleet (56 ships), and 30 days would affect 9.9% of fleet (168 ships). See Appendix 1.
 - Looking at this by vessel class, 90 days will mainly cover the outliers in the “other” vessel class (which includes the higher risk types such as research vessels and working vessels) and unmanned barges. See Appendix 2.

Section 7 – Biofouling Reporting Form

- Would replace the current HHRF with a shorter form that would be used as a pre-arrival risk assessment for potential boarding by inspectors.

- Also to continue to collect data for future refinement of regulations, compliance tracking/verification, and research purposes.

Discussion on Draft Regulations

General Questions

(Ruiz) Does this apply to barges as well? (Scianni) Yes, anything more than 300 GRT, carrying ballast. The vessel doesn't have to be under its own power.

(Berge) Could you go over details of the IMO guidelines? Where are they on reporting, recordkeeping, and regulations? (Scianni) We have heard from Chris Wiley (Canada) that not much has changed from the earlier draft Naomi Parker (Biosecurity New Zealand) discussed at the last meeting. They are voluntary guidelines with no reporting requirements. They suggest keeping biofouling management plans and record books. We are using that as a model. (Berge) Essentially we [California] will end up ahead of IMO. (Falkner) Yes, but as usual, we have tried to remain consistent with IMO, adding mandatory management requirements.

Section 1 Discussion - Purpose, Applicability and Date of Implementation

(Shiba) Under (a) suggest using "best available economically achievable technology..." instead of current text. (Falkner) The language is taken directly from statute, though not necessarily best grammatically.

(Falkner) Does one year delay of implementation after the adoption of regulations provide enough time for vessels to get a log book and management plan together (Jan 1, 2013)? It gives nearly two years, and we [CSLC] will likely provide a sample plan as a template, with input from the industry. (George, Berge) We have the documents out for review, but have not gotten a lot of comments yet.

(Morin) Are there ships that don't carry ballast water? (Falkner) Not that we're aware of. Even oil rigs have the capability to carry ballast. Again, unless legislation is changed, we're kind of stuck with that language.

(George) Can you identify which of the definitions come are from IMO, the legislation, and not?

(Scianni) Yes – We'll send those to the entire group.

(Coutts) The finalization of IMO guidelines will push the development of new in-water cleaning technologies. Suggest expanding the definition of in-water cleaning to include new technologies that may come to light. (Scianni) we had language in there, but some people suggested removing because they would be considered in-water "treatment", not cleaning. (Falkner) However, we should not limit ourselves. If you have suggested language, we can see if we can change the definition or add another term.

(Coutts) On dry dock support strips, depending on size, some vessels may not technically go into "drydock" though they are supported by strips when cleaned and painted. Perhaps remove the term "dry dock" and just use "support strips"? (Falkner) We'll look into it.

Section 3 Discussion – Performance Standards for Biofouling Management

(Scianni) You'll note that the term "performance standards" is in brackets, and this was because we thought it may get confused with ballast water performance standards. What does industry think?

(George) I think if you say it's for biofouling, it's clear.

(Berge) How is a master to know his vessel is within performance standards without being able to check all the time? (Scianni) The intent is that SLC would get a reporting form on which we would perform a risk analysis. If the form triggered a red flag, we would likely inspect the vessel. The inspector would check paperwork (cleaning recently? appropriate coatings used?). If a vessel has many red flags, we could have an underwater inspection done. (Falkner) It may mean a bit more diligence on the part of the vessel owner/operator/master. If the vessel tends to have a lot of fouling, they'll have to be checking more often. Whenever there's a prop cleaning, they should have other places like niches checked too. There are also some technologies already installed on many vessels in niche areas that can be turned on to minimize fouling (MGPS). (Scianni) At least half the fleet has them installed. (Falkner) If these are turned on, the likelihood is increased that you'll be in compliance. (Berge) Most ships are doing fuel consumption analysis to gauge when to clean. But some Captains may have had an inspection a year ago, and may not know that's there's more fouling than expected. (George) There should be clarification for what ships can use as legitimate to determine if the last cleaning met the standards. The determination must be hung on an activity, or you're leaving possibility that they may not be doing what you want as often as you'd like. (Scianni) There are annual inspections, such as those for Safety of Life at Sea requirements, which are opportunities to check the fouling levels.

(Morin) If you ask for certification from captains, you'll run into push back since they have not been able to check themselves. (Millett) Most if not all of vessels are cleaning props every 6 months, and most certainly do it no longer than every 12 months. At this time, they always check sea chest, and do a cursory swim around to look on the rest of the vessel. I receive those reports, and must imagine that the captains must be getting them as well. (Morin) I know Chevron cleans our propellers every 6 months, and Chevron is probably similar to the major U.S. vessel tanker fleet. (Falkner) That's exactly it - we want to target the derelict, stochastic vessels, not necessarily the well maintained ones.

(Berge) To people active in IMO, has this (reporting and compliance testing) been discussed there? (Scianni) In next few years, they are going to evaluate how guidelines were being followed, and decide if mandatory measures need to be implemented. (Falkner) Unfortunately IMO participants are not on this call, but we can check with them and get back to the group on that. [**Chris Wiley, Transport Canada (contacted after TAG meeting for this specific question): the Biofouling Guidelines are consistent with IMO normal practice in developing Guidelines before mandatory implementation. As Chris indicated there is a mechanism for evaluating the effectiveness in the event they go mandatory. From a Canadian point of view, we would support a mandatory Convention.]

(Morin) Where does ranking system (LOF) come from again? When would you ever have a rank 0? That would be pretty much right at or after drydock. Would we care about a 0? (Falkner) Its meant to give the entire scale, pristine through scary. (Scianni) The idea is to provide a complete scale so inspectors could use ranks to describe compliance or violation. Also, for our information gathering, the more detailed information the better.

(Berge) In some materials from coating manufacturers different rankings use hard fouling vs. soft or plant fouling. Is that relevant here? (Scianni) Those rankings tend to relate more to drag as a determinant for when to clean/repaint rather than for nonindigenous species. Both of those would be considered macrofouling though, so would result in violation. (Millett) Agreed. This system is useful for cleaning various antifouling system types, to prevent damage to it during cleaning on the vessel. You may use other chemicals, brushes or cleaning techniques to clean for various fouling levels depending on the coating system. Ranks 4-5 (LOF) are generally used by industry (paint manufacturers) to clean. I wouldn't be concerned with using those as standards here. At 5, you're looking at a vessel that needs to go to dry dock.

Section 4 – Discussion, Biofouling Management Plan

(George) Could you clarify which parts differ from the IMO guidelines? Not sure how parts of (C) be complied with when operating conditions and trading routes change a lot. (Falkner) yes, we understand that some vessel classes change routes a lot. We'll go through and identify which elements are from IMO and which are modified.

(Morin) What specifically constitutes training? Training in what? (Falkner) We have to be careful dictating specific training to the maritime industry to keep clear of a Commerce Clause issue. This language was pulled almost directly from legislation for ballast water. The description of the ballast water management plan is the same way. We can talk with our legal counsel to see if we can be more prescriptive, but we're open to suggestion from industry as well. (Millett) The operator typically does already have training in place. Maybe remove "master" from this section, since the ship owner or operator has that in place already. Also, masters change on a regular basis. (Falkner) Good suggestion.

(Coutts) – For (C)(iv), the duration between dry dock, you may want to use in-service period of antifouling coating, as opposed to dry docking.

Section 5 Discussion –Biofouling Record Book

(Scianni) Again, we will let everyone know which elements came from the IMO guidelines.

(Gregorio) What do systems for niche areas do? (Coulombe) The most common marine growth protection systems (MGPSs) use a copper anode system, which releases copper in the stream going into the piping. It's effective in keeping fouling down in sea chests and internal piping, but you'd still have to clean sea chest gratings. Sodium hypochlorite systems are also quite common. The copper is generally captured by the inflow and brought into the system.

(Coutts) Having inspected many ships, I find that for about 90% of MGPS, the origin of the systems is at the sea strainer rather than the sea chest itself. Those are not preventing fouling in the chests. Also, other nice areas don't have MGPSs, and they are purely reliant on antifouling coatings. Probably 80% of niche areas are not protected. (Coulombe) That is correct. Most are concentrated in strainers inboard of the sea chests. (Coutts) If dosages are correct, they work well for their intent. But the origin is very important. We ask the origin of the MGPS as a part of our risk assessment, in addition to movements, vessel type, etc.

(Millett) The requirement for a diagram showing location of DDSS could be very onerous. Many times owners ask us to change color so they can tell where to alternate the support locations.

(Coutts) Our pre inspection list asks master to supply a docking plan. At least 95% of vessels I've inspected have these already (3000 GRT and larger) demonstrating where docking blocks are to be positioned to avoid structural issues. Each time they dry dock, they are suppose to move them slightly to cover old areas. These plans show every dry dock block. Vessels also have a general arrangement schematic, which will show locations of niche areas, but they don't show specific DDSS locations. The plans have been very useful for dive inspections. It's important for us to know the number of dock blocks while conducting surveys to determine proportion that we sample.

(Coutts) A lot of classification societies record their surveys by CCTV footage, and dive companies will hold those records for a number of years. Is it useful to incorporate that into documents here?

(Scianni) Anything that can be used to verify compliance would be useful. (Coutts) You can go to any dive company accredited by the classification societies, and they have archives of these. The vessel owner should have them too. (Falkner) Have you found that they have been on the vessels?

(Coutts) Not generally. But recordings are held in the offices, and by the diving company. If they had to be on the vessel, it might be an opportunity for an inspector to throw a CD in a computer and view it on the spot.

Section 6 Discussion – Vessels with Extended Residency Periods

(Coutts) In Australia, a risk assessment tends to use a cumulative risk method rather than straight layup, which includes factors. For example, the frequency of moderate layups (e.g. many 3-4 week layups), and then a vessel movement, might pose a high risk. Frequency of layup is important. These might be as risky as those that sit for a straight 3 months.

(Berge) Are things outlined here similar to what's used in New Zealand or Australia (recordkeeping, reporting, etc.)? (Coutts) This document is outstanding, but some minor tweaks might be helpful. New Zealand is a little behind – they were looking to implement requirements in 2012 but may be delayed. In Australia, the commonwealth has been developing requirements. They also have quite draconian measures; they can act on the presence of any restricted species. There is a requirement to submit to a questionnaire, have a risk assessment procedure, and based on that tell you if you should do an in water inspection and/or clean. Last week, a vessel discovered to have an invasive mussel attached was made to turn around and go back to Singapore. (Gowland) We [Australia] are progressing down a path similar to California's framework. (Falkner) We [California] have been working closely with Australia, New Zealand and Canada, sharing information, and having discussions to get some consistency. (Gowland) We [Australia] are also developing a risk analysis process to address a range of biosecurity issues.

Section 7 Discussion – Biofouling Reporting Form

(Berge)– In interest of moving to a risk-based analysis, have you considered having a system where ships must report only when they have made a high risk activity, rather than having every ship report? (Falkner) The downside with that scenario is that you don't know if anything's happened because they didn't bother to file, or if nothing really happened. That's why we ask for ballast water reporting forms at every port of call, because we were finding that discharge data were missing when we were only getting the first port of call information. I'm hesitant to request an analysis only when "things have changed", but do appreciate the potential onerous nature of all the paperwork vessels must do. We are trying to capture high risk vessels, and we're still trying to collect data on that. We're also open to suggestions. (George) I haven't gotten vessel feedback yet, but often it's easy to send the same form every time they come in, especially if activities haven't changed. Maybe you can ask at the beginning of the form if anything has or has not changed since last port call, if not, the form is done. Cruise ships that come every 3 days won't usually have anything change. (Falkner) That's a good idea. We're also pushing to try to have a web based system so vessels can submit themselves online. That would help everybody. (Morin) It might be helpful to know what questions will be asked to provide input on suggested frequency of submission. (Falkner) Good point...we should put together a straw person form for input.

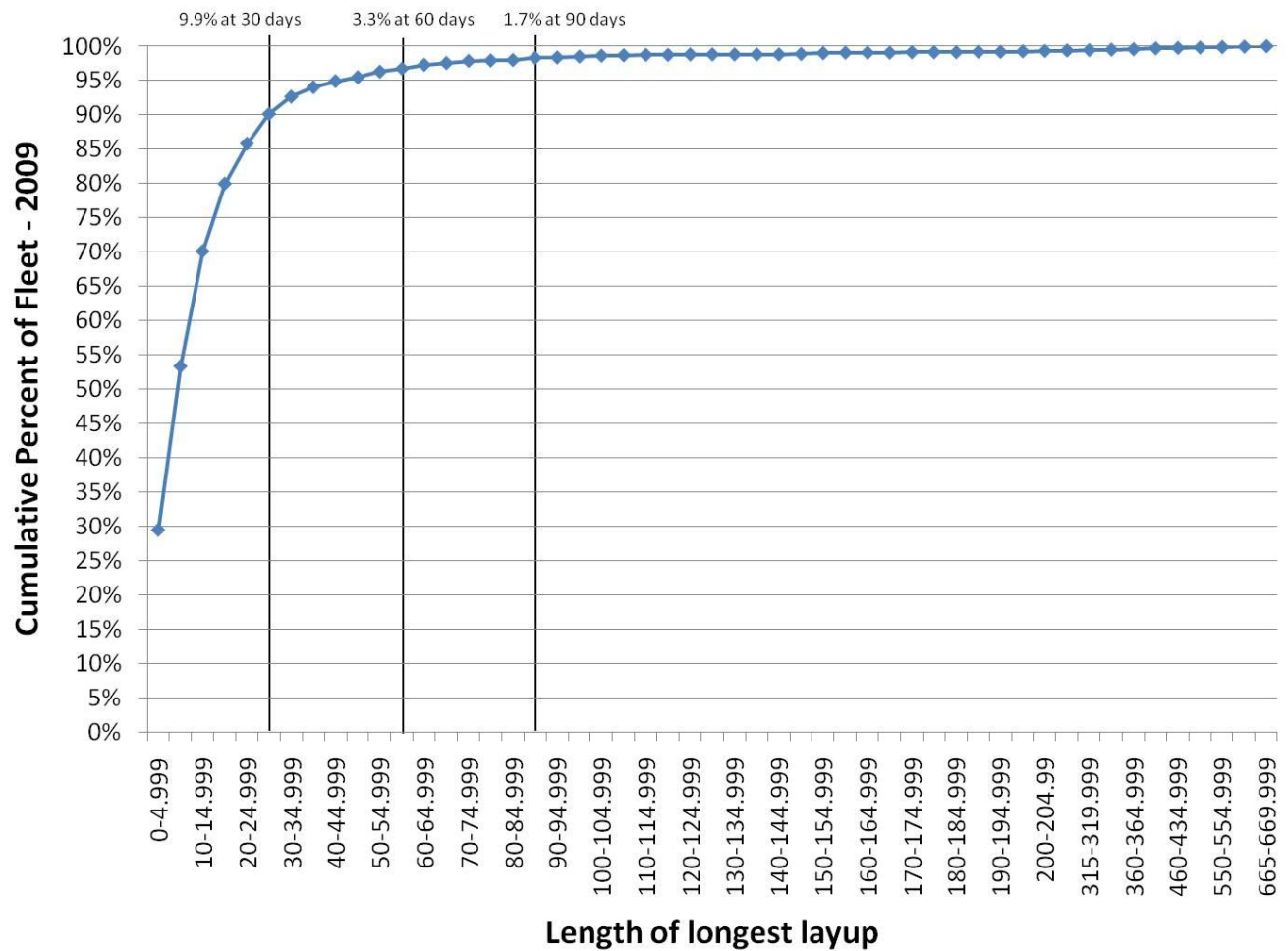
Final General Questions/Comments

(Berge) In order to get feedback on the document, we need to let some people know what's being considered, but have not sent it out due to the "do not distribute" text on the top. (Scianni) Go ahead and distribute and we'll get comments from that.

(George) I would like to have info on where (IMO guidelines, legislation, etc) the information came from before formulating comments, and then can we have a week after that to get you comments? (Scianni) How about the 2nd of March? (Berge) I probably can't get you anything till the 7th or 8th of March. (Falkner) Okay, so we will request a March 7th deadline for comments from everyone.

Adjourn

Appendix 1 – Cumulative percent of CA fleet that would be impacted by proposed regulations for vessels experiencing extended residency periods (draft Section 6666) for different durations/definition of “Extended Residency Period” (i.e. 30 days, 60 days, 90 days).



Appendix 2 – Cumulative percent of each vessel class within CA fleet that would be impacted by proposed regulations for vessels experiencing extended residency periods (draft Section 6666) for different durations/definition of “Extended Residency Period” (i.e. 30 days, 60 days, 90 days).

